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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
SIDDIQI, MOHAMMAD A	

ART UNIT	PAPER NUMBER
2154	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/783,163	KAGAMI ET AL.	
	Examiner	Art Unit	
	Mohammad A Siddiqi	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *22-26* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *05/26/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-20 are presented for examination.

Restrictions

2. Newly submitted claims 22-26 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Restriction to one of the following invention is required under 35 U.S.C. 121.

I. Claims 1-21, drawn to managing the resources of the computers connected by the network, classified in class 709 subclass 223.

II. Claims 22-26, drawn to displaying graphically objects on-screen interface, classified in class 345, subclass 764.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as managing the resources of the computers connected by the network, lacking the particulars of invention II.

Because the inventions are distinct for the reason given above and have acquired a separate status in the art shown by their different searches and their recognized divergent subject matter, and the search required for one Group is not required for another, restriction for examination purpose as indicated is proper.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 22-26 withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. Claims 1, 3, and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Shank et al. (6,145,028) (hereinafter Shank).

5. As per claim 1, Shank discloses a storage management service system, comprising:

a storage on demand (SoD) center system (100, fig 1 col 3, lines 10-16);

a storage subsystem including a plurality of storage devices (100, fig 1 col 3, lines 10-16) and a plurality of I/O ports (102, 104, fig 1, col 6, lines 58-60); and

a host computer coupled to (102, 104, fig 1, col 3, lines 11-15), said storage subsystem (100, 104, fig 1, col 3, line s11-15), and to said SoD center system (102, fig 1, col 3, lines 11-15); wherein

said SoD center system receives input of an SoD demand (506, fig 5, col 4, lines 11-21), said SoD demand including a request to specify a storage resource (translates, col 4, lines 11-16), sends said demand to said storage subsystem (col 4, lines 11-16); and wherein said storage subsystem receives said demand (col 6, lines 4-15), makes said storage resource usable (510,512, fig 5), and sends a management result to the SoD center system (col 6, lines 4-15).

6. As per claim 3, Shank discloses host computer and said storage subsystem are coupled by physical and logical connections between at least one of a plurality of host 1/0 controllers and at least one of a plurality of subsystem 1/0 Ports (102, 104, fig 1, col 6, lines 58-63).

7. As per claim 21, Shank discloses wherein said storage resource includes said storage devices (100, fig 1, col 3, lines 35-45).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 2, 4-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shank et al. (6,145,028) (hereinafter Shank) in view of McKean et al. (6,647,387) (hereinafter McKean).

10. As per claim 2, Shank discloses request includes an 1/0 path setting to be updated (col 8, lines 7-17), said SoD center system sends an 1/0 path setting request to said host computer (col 4, lines 1-10);

and wherein said host computer requests an application (132, fig 1,col 4, lines 1-3) to update an 1/0 path setting based upon said 1/0 path setting system request, receives an update result from said operating system, sends a setting result to said SoD center system (col 7, lines 17-28). Shank fails to disclose operating system performing the above task. Shank fails to disclose an operating system performing said above functions. However this is well known in the art, for example, McKean discloses operating system performing said above tasks (col 7, lines 1-6). system (col 6, lines 2-42). It would have been obvious tone of ordinary skill in the art at the time invention was made to combine the teachings of Shank and McKean. The motivation would have been to have a system where an operating system communicates with the devices.

11. As per claim 4, Shank fails to discloses host computer and said storage subsystem are coupled by a network switch between at least one of a plurality of host 1/0 controllers and at least one of a plurality of subsystem 1/0 ports. However, McKean discloses host computer and said storage subsystem are coupled by a network switch between at least one of a

plurality of host 1/0 controllers and at least one of a plurality of subsystem 1/0 ports (108, fig 1, col 3, lines 37-45). It would have been obvious tone of ordinary skill in the art at the time invention was made to combine the teachings of Shank and McKean. The motivation would have been to have a Small Computer System Interface protocol running over a Fibre Channel physical layer.

12. As per claim 5, the claim is rejected for the same reasons as claim 4, above.

13. As per claim 6, Shank discloses a storage apparatus comprising:

memory (124, fig 1);

a plurality of storage devices (100, fig 1, col 3, lines 10-16);

a plurality of 1/0 ports providing an interface to said plurality of storage devices (102,104, fig 1, col 6, lines 58-63);

a device management store (col 2, lines 18-28), in which a status of said a plurality of storage devices is stored (col 2, lines 18-28, and col 4, lines 24-27), and an I/O port management store (col 6, lines 58-63), in which a status of said plurality of I/O ports is stored (102, 104, fig 1, col 6, lines 58-63), and

a storage resource management processor (126, fig 1, col 4, lines 1-14); wherein

said storage management processor receives a demand for storage resources (126, fig 1, col 4, lines 1-14), the demand specifying one of said storage devices (col 2, lines 18-28, and col 4, lines 24-27), updates said device management store and said I/O port management store (col 2, lines 18-28, and col 4, lines 24-27), and sends a management result responsive to said demand (col 6, lines 4-15); and wherein updates to at least one of a plurality of paths connecting to storage resources allocated from at least one of said plurality of storage devices are automatically defined to an application (132, fig 1, col 4, lines 1-16) of a use machine (col 2, lines 18-28, and col 6, lines 58-67).

Shank fails to disclose an operating system performing said above functions. However this is well known in the art, for example, McKean discloses operating system performing said above functions (col 7, lines 1-6). It would have been obvious tone of ordinary skill in the art at the time invention was made to combine the teachings of Shank and McKean. The motivation would have been to have a system where operating system configures the host system and maps the ports to access the mapped I/O path.

14. As per claim 7, Shank discloses plurality of storage devices that comprising at least one of a magnetic disk, an optical disk, a magnetic -optical disk, and semiconductor memory (RAID, 100, fig 1, col 3, lines 41-44).

15. As per claim 8, the claim is rejected for the same reasons as claim 6, above. In addition McKean discloses network interface (106, fig 1, col 3, lines 39-51)

16. As per claim 9, the claim is rejected for same reasons as claim 4, above.

17. As per claims 10 and 19, claims are rejected for the same reasons as claim 6, above. In Addition, Shank discloses

receiving at said host an I/O path setting request from said center system (col 8, lines 4-27), said I/O path setting request specifying a path to a resource in said storage subsystem allocated for use by said host (col 8, lines 4-27);

requesting an application resident in said host (102, 132, fig 1) to update an I/O path setting based upon said I/O path setting request (col 8, lines 4-27);

receiving an update result from said application (102, 132, fig 1, col 4, lines 1-16); and

sending a setting result to said center system based upon said update result (status of the storage devices, col 4, lines 1-16).

18. As per claim 11, Shank discloses storing an indication that a particular 1/0 port in said storage subsystem is accessible to a particular host 1/0 controller (col 6, lines 1-15).

19. As per claims 12 and 20, Shank discloses

receiving at said center system computer an input of a demand for storage resources (col 2, lines 19-28);

determining whether sufficient resources exist to meet said demand (lookup, col 6, lines 20-23);

sending said demand for storage resources to said storage subsystem (col 6, lines 4-15), if sufficient resources were determined to exist (lookup, col 6, lines 20-23);

receiving from said storage subsystem a management result (col 8, lines 4-27), said management result indicating whether storage resources have been successfully allocated in accordance with said demand (col 8, lines 4-27);

storing said management result (configuration file, col 8, lines 2-27);

determining whether said demand includes an 1/0 path setting request (col 6, lines 2-15);

sending said 1/0 path setting request to said host computer, if said demand included an 1/0 path setting request, receiving said setting result from said host(col 6, lines 2-15); and

storing said setting result (configuration file, 142, 140, fig 1, col 8, lines 2-27).

20. As per claim 13, Shank discloses receiving said demand for storage resources at said storage subsystem (col 2, lines 19-28);

determining whether said demand includes a command to make at least one of a plurality of installed devices available (col 4, lines 3-16);

updating a device management store (col 8, lines 2-27, if said demand includes a command to make at least one of a plurality of installed devices available (col 7, lines 17-24);

updating an I/O port management store (col 6, lines 58-67)

and sending a resource management result to said center system (col 6, lines 2-42).

21. As per claim 14, Shank discloses storing an indication that a particular device is usable (col 8, lines 1-20 and col 5, lines 30-35).

22. As per claim 15, Shank discloses storing an indication that a particular 1/0 port is usable (col 6, lines 58-67 and col 5, lines 30-35).

23. As per claim 16, Shank discloses receiving at said storage subsystem an 1/0 command to access storage resources from said host (col 2, lines 19-28);

determining whether storage resources requested by said 1/0 command are usable (col 5, lines 30-35);

performing said i/o command, if said storage resources requested by said 1/0 command are usable (col 8, lines 1-20 and col 6, lines 58-67);

otherwise rejecting said 1/0 command; and sending an 1/0 result to said host (col 8, lines 1-20 and col 6, lines 58-67).

24. As per claim 17, Shank discloses searching said device management store to determine whether devices requested in said 1/0 command are usable (lookup, col 6, lines 20-23 and 58 -67).

25. As per claim 18, Shanks discloses searching said 1/0 port management table to determine whether 1/0 ports requested in said 1/0 command are usable and whether devices requested in said 1/0 command are accessible via 1/0 ports requested in said 1/0 command (col 6, lines 58-67 and col 8, lines 1-26).

Response to Arguments

26. Applicant's arguments with respect to claims 1-22, have been considered but are moot in view of the new ground(s) of rejection.

27. Kitamura and Pothapragada were not the cited references. Nguyen and Shank were the cited references.

Conclusion

28. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad A Siddiqi whose telephone number is (571) 272-3976. The examiner can normally be reached on Monday -Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MAS

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